UNITED STATES PATENT AND TRADEMARK OFFICE

A

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,940	03/23/2001	Alfred Hermann	20005778US.1	6950

7590 12/13/2005

HEWLETT-PACKARD COMPANY
INTELLECTUAL PROPERTY ADMINISTRATION
POST OFFICE BOX 272400
FORT COLLINS, CO 80527-2400

EXAMINER	
HUTTON JR, WILLIAM D	
ART UNIT	**PAPER NUMBER**
2176	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/816,940	HERMANN ET AL.	
	Examiner	Art Unit	
	Doug Hutton	2176	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Applicant's Response

In Applicant's Response dated 24 October 2005, Applicant amended Claims 1-6, 9, 15, 16 and 21-23, and argued against all rejections previously set forth in the Office Action dated 5 April 2005.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-23 remain rejected under 35 U.S.C. 102(b) as being anticipated by Stone, Brad et al., **UNIX Fault Management: A Guide for System Administration**, (Prentice Hall PTR, ©1999).

Claim 1:

Stone discloses *a method carried out by a status engine for monitoring services of an information technology (IT) environment* (see Chapter 6 "*Monitoring Network Services*," Pages 1-5 of 5 – Stone discloses this limitation in that the book discloses monitoring network services), *comprising:*

- *storing a representation of a service hierarchy* (see Chapter 9 "*Using Event Correlation Tools*," Pages 1-14 of 14 – Stone discloses this limitation in that the book discloses event correlation tools for use in clustered environments. Stone

expressly discloses that multiple nodes of the managed enterprise may notice the failure of a shared disc device and send "critical event" error messages to the enterprise management station. When this happens, the event correlation tool operates to intelligently filter and consolidate the messages. This discloses "storing a representation of a service hierarchy" in at least two ways. Firstly, the **management station** is at the top of the "service hierarchy," with the **multiple nodes** being "subordinate" to the management station and the **shared disc device** being "subordinate" to the multiple nodes. The network administration system comprises the relationships of the network components and the rules for reporting errors and correlating the error messages. Thus, the network administration system disclosed in Stone "stores" a "representation of a service hierarchy." Secondly, the event correlation rules establish procedures for reporting events that are interrelated. As indicated in the example mentioned above, the rules may comprise procedures for handling the situation that arises when **multiple nodes** notice the failure of a **shared disc device**. Such rules would recognize the "status" of the "subordinate" **shared disc device** (i.e., "failed" status), efficiently handle the multiple error messages being reported by the "superordinate" **multiple nodes**, and report the error to the enterprise **management station** in an efficient manner. Thus, the rules recognize the "hierarchy" of the multiple nodes (i.e., "superordinate services") and the shared disc (i.e., "subordinate service") and "stores" the "service hierarchy." Stone also discloses this limitation in that the book discloses the Seagate NerveCenter

enterprise management product - hereinafter, Seagate - that uses rules-based filtering and advanced correlation to pinpoint root causes of critical network issues. Seagate also uses behavioral models to define the relationships between critical conditions and specific corrective actions. Seagate also includes **models** for monitoring **network traffic**, **performance**, **status**, security and **error conditions** of the **components** within the enterprise. Finally, Seagate correlates across network devices, UNIX systems and NT systems using a distributed management model. In performing these functions, Seagate "stores" a "representation" of a "service hierarchy," and these models define the hierarchical relationships between the components of the enterprise - i.e., the "superordinate services" and the "subordinate services."), *wherein the stored representation includes service elements* (Stone discloses this limitation in that the components of the "stored representations" mentioned in the above discussions comprise "service elements." Specifically, the **management station**, the **multiple nodes** and the **shared disc device** are "service elements." Also, specifically, the **models** that monitor **network traffic**, **performance**, **status** and **error conditions** of the **components** within the enterprise are "service elements."), *wherein each of the service elements represents a service of the IT environment* (Stone discloses this limitation in that the "service elements" mentioned in the above discussions "represent" a "service" in that users of the managed network enterprise access the nodes and the shared disc device to use the applications of the network enterprise. That is, the users access the

components of the enterprise network to use the applications of the enterprise network.) *and each of the service elements has an associated service status* (Stone discloses this limitation in that, as indicated in the above discussion, the event correlation tools monitor the "service elements" to determine their "status" and report errors. Similarly, as indicated in the above discussion, Seagate monitors the "status" of the enterprise network components.), *wherein the service hierarchy includes at least one superordinate service element and at least one subordinate service element* (As indicated in the above discussion, the "hierarchy" established by the event correlation tools comprises "superordinate service elements" and "subordinate service elements." Similarly, the models established by Seagate comprise "superordinate service elements" and "subordinate service elements."); *and*

- *calculating a status of the at least one superordinate service element by considering status dependency and propagation between the service elements within the service hierarchy, according to one or more rules* (As indicated in the above discussion, Stone discloses using event correlation tools and service models for monitoring the status of enterprise network devices in enterprise network management. The status of any "superordinate" component within the service model will depend upon the statuses of "subordinate" components and the propagation of data from those "subordinate" components in that a problem occurring at a "subordinate" component will affect a "superordinate" component. Thus, any "calculation" of the "status" of a "superordinate" service will include

consideration of the "status dependency" and "propagation" between "service elements." Also, see Chapter 4 "*Using Graphical Status Monitors,*" and "*OpenView Network Node Manager*" Pages 1-3 of 16 – Stone discloses this limitation in that graphical status monitors display hierarchical maps that display status information regarding the components within the service model. The maps display the health of the objects represented and enable the user to drill down through complex network topologies. Also, see Chapter 4 "*ClusterView,*" Pages 3-5 of 16 – Stone discloses this limitation in that the MC/ServiceGuard network monitoring tool monitors clusters. That is, the software on each system monitors other systems on the network. Whenever failures occur at the monitored systems on the network, the software detects the problem and restarts critical applications at another node on the network. Stated differently, MC/ServiceGuard monitors systems, processes and the network, and, whenever it detects a failure at any of the monitored components of the network, all critical resources are moved to another node within the network. Also, see Chapter 7 "*Monitoring the Application,*" and "*Comparison of Application Monitoring Products*" Pages 1-2 of 2 – Stone discloses this limitation in that it discloses that maintaining application availability means maintaining the availability and performance of all components that the application depends on, including databases, networks, storage, and the system itself. Also, Stone expressly states that the use of MC/ServiceGuard with Event Monitoring Service (EMS) enables a user to make explicit links between an application and its dependent

resources. Thus, the status of an application depends upon the statuses of any components on which the application relies, and rules for determining the dependent status of the application will depend upon and consider the statuses of the underlying components.),

wherein the status of the at least one superordinate service element depends on a status of the at least one subordinate service element (As indicated in the above discussion, the status of a "superordinate" component will depend upon the statuses of "subordinate" components.),

wherein the rules define the dependency of the status of the at least one superordinate service element on the status of the at least one subordinate service element and a propagation of the status from the at least one subordinate service element to the at least one superordinate service element (As indicated in the above discussion, Stone discloses enterprise management tools that allows network administrators to write rules for network components that depend on other underlying components.), *and*

wherein the rules include at least one of:

- *a rule that is based on additional attributes of at least one of the service elements other than the service hierarchy status* (HP includes rules that are based on "additional attributes of the service other than the status" in that it filters out redundant events before forwarding them to the management station and it forwards events to the management station only after a user-defined threshold is met. MasterCell includes rules that are based on "additional attributes of the

service other than the status" in that it regulates events by holding repetitive occurrences of events until a threshold is met.);

- *a rule that ignores the at least one subordinate services element* (HP includes rules that "ignore subordinate services" in that it can be configured to filter out information that is unnecessary in order to identify the root cause of a problem and correct said problem.);
- *a rule that is defined by a user on the basis of at least one of i) logical and ii) arithmetical operations of the status or the attributes of the at least one subordinate services element* (HP includes rules that are "defined by logical and arithmetical operations of the status of subordinate services or of said messages or of said attributes" in that it reduces event storms by suppressing repeated events using a time-based filter. HP also allows users to create their own monitor scripts, which includes both "logical" and "arithmetical" operations of the status of subordinate services or of said messages or of said attributes.); *and*
- *a rule that is programmed individually by a user* (HP allows users to create their own monitor scripts; Seagate allows the user to define the rules via a GUI.).

Claim 2:

Stone discloses *the method of Claim 1, wherein the rules, when the status of the at least one superordinate service element is calculated, include:*

- *status propagation rules that each have as an input only one parameter, wherein the parameter is the status of the at least one subordinate service element* (HP

includes "status propagation rules" that are based solely on the status of the monitored service), *and*

- *status calculation rules that have as an input one or more parameters, selected from the group consisting of: the propagated status of the at least one subordinate services elements, messages coming from services of the IT environment, and additional attributes* (HP includes "status calculation rules" in that it includes filters that are based on status severity of subordinate services, the particular types of messages and other factors such as various attributes of the originating system).

Claim 3:

Stone discloses *the method of Claim 1, wherein the calculation of the status of the at least one superordinate service element depends on any combination of three different types of input data: the status of the at least one subordinate service element, messages affecting the at least one superordinate service element and the additional attributes of the service elements* (as explained in the above rejection for Claim 2, Stone discloses these limitations).

Claim 4:

Stone discloses *the method of Claim 1, wherein the additional attributes can take values that are different from possible values of the status of the service elements* (the "additional attributes" can take values that are "different from the possible values of the

status of the services" in that the "additional attribute" values comprise numeric values that affect the forwarding of events only after a user-defined threshold is met and the "status" values comprise the severity of the detected problem, such as "minor warning" and "critical").

Claim 5:

Stone discloses *the method of Claim 1, wherein the status of the at least one superordinate service element is only calculated if certain attributes of the at least one superordinate service element are set* (as explained in the above rejection for Claim 1, HP discloses a rule that is "based on additional attributes of a service;" thus, "certain attributes" of the superordinate service are "set" and the status of the superordinate service is calculated).

Claim 6:

Stone discloses *the method of Claim 1, wherein specific subordinate service elements of the at least one subordinate service element are individually treated for the calculation of the status of the at least one superordinate service element* (HP includes tools that allow the user to customize monitoring rules to address each subordinate service individually).

Claim 7:

Stone discloses *the method of Claim 1, wherein user-specific external data is included in the rules* (HP includes "user-specific external data in the rules" in that it allows the user to customize monitoring rules to address numerous different network components).

Claim 8:

Stone discloses *the method of Claim 1, wherein time of the day information is included in the rules* (HP includes "time of the day information" in the rules in that it allows the user to customize monitoring rules to enable events to be forwarded to the appropriate management station in a global environment based on the time of day).

Claim 9:

Stone discloses *a computer system for monitoring services of an information technology (IT) environment, wherein the computer system monitors the services based on a service hierarchy* (as indicated in the above rejection for Claim 1, Stone discloses a "computer system" that performs these functions), *wherein a stored representation of the service hierarchy includes service elements representing services of the IT environment and each having an associated service status, wherein the service elements include at least one superordinate service element and at least one subordinate service element* (as indicated in the above rejection for Claim 1, Stone discloses these limitations), *wherein a status of the at least one superordinate service*

element depends on a status of the at least one subordinate service element (as indicated in the above rejection for Claim 1, Stone discloses these limitations), *the system comprising:*

- *a status engine for calculating the status of at least one of the service model elements, wherein the status engine can calculate the status of the at least one subordinate service element by considering status dependency and propagation between the service model elements within the service hierarchy, according to one or more rules* (as indicated in the above rejection for Claim 1, Stone discloses these limitations)*;*
- *a user interface for configuring the rules* (HP includes a "user interface for configuring the rules" in that it comprises an interface used to define monitoring conditions)*; and*
- *a graphical display for visualizing the monitoring results* (HP includes a "graphical display for visualizing the monitoring results" in that it comprises an interface for monitoring the components of the system),

wherein the rules define the dependency of the status of the at least one superordinate service element on the status of the at least one subordinate service element and a propagation of the status from the at least one subordinate service element to the at least one superordinate service element (as indicated in the above rejection for Claim 1, Stone discloses this limitation), *and*

wherein the rules include at least one of:

- *a rule that is based on additional attributes of at least one of the service elements other than the status;*
- *a rule that ignores the at least one subordinate services element;*
- *a rule that is defined by a user on the basis of at least one of i) logical and ii) arithmetical operations of the status or the additional attributes of the at least one subordinate services element; and*
- *a rule that is programmed individually by a user* (as indicated in the above rejection for Claim 1, Stone discloses each of these rules).

Claim 10:

Stone discloses *the computer system of Claim 9, wherein the interface for configuring the rules is a graphical user interface* (HP includes a "graphical user interface for configuring the rules" in that it comprises an interface used to define monitoring conditions).

Claim 11:

Stone discloses *the computer system of Claim 9, wherein the interface for configuring the rules is an application programming interface to other programming languages* (HP includes APIs for configuring monitoring conditions).

Claim 12:

Stone discloses *the computer system of Claim 9, wherein the interface for configuring the rules is a script programming language of which a syntax is provided by the status engine* (HP includes a "script programming language of which the syntax is provided by the status engine" in that it comprises allows the user to customize rules that are managed by an "Edit Adviser Syntax" option).

Claim 13:

Stone discloses *the computer system of Claim 9, wherein the status engine is capable of handling a graph structure of the IT network of services in which each of the services can have one or more depending services and one or more services on which each of the services depends* (HP is capable of handling a "graph structure of the IT network of services" in that it allows the user to customize monitoring rules for any of the components of the network).

Claim 14:

Stone discloses *the computer system of Claim 9, wherein the dependencies between the services of the IT environment are visualized as a graphical representation* (HP includes a "graphical representation" of the dependencies between the services in that it includes a hierarchical display of the components of the network).

Claim 15:

Stone discloses *the computer system of Claim 14, wherein the status and status changes of the service elements are visualized in a graphical representation* (HP includes a "graphical representation of e status and status changes of the services" in that it comprises graphical status monitors).

Claim 16:

Claim 16 recites computer software for performing the method of Claim 1. Thus, Stone discloses every limitation of Claim 16, as indicated in the above rejection for Claim 1.

Claims 17-20:

Claims 17-20 recite limitations that were also recited in Claims 9-12, respectively. Thus, Stone discloses every limitation of Claims 17-20, as indicated in the above rejections for Claims 9-12.

Claims 21-23:

Stone discloses all limitations of Claims 1, 9 and 16, *wherein the status of at least one of the service model elements further depends on one or more messages coming from services of the IT environment and affecting the status of the at least one of the service model elements and wherein the rules further define the dependency of the status of the at least one of the service model elements on the messages* (Stone

discloses this limitation in that the network monitoring tools comprise messages regarding the health of the network components being monitored. These messages are generated and sent according to the rules of the network monitoring tools. As indicated in the above discussion, the status of one network component might depend on the statuses of other network components. Thus, a message regarding a problem with a "subordinate" component will affect the status of "superordinate" component.).

Response to Arguments

Applicant's arguments filed 24 October 2005 have been fully considered but they are not persuasive.

Arguments for Claims 1, 9 and 16:

Applicant argues that Stone fails to disclose a method for calculating the status of a superordinate service element "by considering status dependency and propagation between the service elements within the service hierarchy" and rules that "define the dependency of the status of a superordinate service element on the status of a subordinate service model element and a propagation of the status from the subordinate service model element to the superordinate service model element" because the Seagate behavior models discussed in Stone define relationships *between certain* ***conditions*** *and specific* ***corrective actions*** rather than defining *dependency relationships between* ***network elements*** (emphasis added). Thus, Applicant argues,

Stone fails to disclose consideration of: 1) relational dependencies between network elements; and 2) propagation of data between the network elements. Applicant's arguments for Claims 9 and 16 correspond to the arguments in support of Claim 1. See *Response* – Page 10, second paragraph through Page 11, first paragraph.

The examiner disagrees.

Firstly, the relevant language of Claim 1 is:

- "*. . . a service hierarchy, . . . wherein the service hierarchy includes at least one superordinate service element and at least one subordinate service element*" (see Line 4 and Lines 7-9);
- "*calculating a status of the at least one superordinate service element by considering status dependency and propagation between the service elements within the service hierarchy, according to one or more rules*" (see Lines 11-13); and
- "*wherein the rules define the dependency of the status of the at least one superordinate service element on the status of the at least one subordinate service element and a propagation of the status from the at least one subordinate service element to the at least one superordinate service element*" (see Lines 16-19).

These limitations essentially recite: a service model that comprises a superordinate service and a subordinate service, wherein a status of the superordinate service depends upon a status of the subordinate service; and determining the status of the

superordinate service. Regarding the above listed limitations, the third limitation is essentially repeats the second limitation.

As indicated in the above rejection for Claim 1, Stone discloses a network administration system that comprises the relationships of the network components and the rules for reporting errors and correlating the error messages. "service hierarchies" that comprise "superordinate service elements" and "subordinate service elements." Stone also discloses

Also, as indicated in the above rejection for Claim 1, Stone discloses the MC/ServiceGuard network monitoring tool. Stone expressly discloses that MC/ServiceGuard monitors systems, processes and the network, and, whenever it detects a failure at any of the monitored components of the network, all critical resources are moved to another node within the network. Thus, the status of all network components are simultaneously monitored, and upon detection of failure at any of the components, corrective action is taken by moving resources to other network components. To perform these functions, MC/ServiceGuard includes monitoring rules to consider the status of each network component and the interdependencies of each network component with all of the other network components.

Finally, Stone expressly states that the use of MC/ServiceGuard with EMS enables a user to make ***explicit links*** between an application and its dependent resources. Thus, the status of an application depends upon the statuses of any components on which the application relies, and rules for determining the dependent

status of the application will depend upon and consider the statuses of the underlying components.

Accordingly, Stone discloses:

- "*. . . a service hierarchy, . . . wherein the service hierarchy includes at least one superordinate service element and at least one subordinate service element;*"
- "*calculating a status of the at least one superordinate service element by considering status dependency and propagation between the service elements within the service hierarchy, according to one or more rules;*" *and*
- "*wherein the rules define the dependency of the status of the at least one superordinate service element on the status of the at least one subordinate service element and a propagation of the status from the at least one subordinate service element to the at least one superordinate service element.*"

Moreover, in the Specification of the present invention, Applicant states that service management tools enable the user to build management models of an IT environment that represent the elements that make up the service and the relationships and dependencies between those elements (see *Specification* – Page 2, Lines 9-16). One service on a computer network may, and often does, depend on the availability and status of other services on the network. Thus, the status of one service may depend on the statuses of other services on the network, and rules for determining the status of a service will consider the statuses of the underlying services. Finally, in the Specification of the present invention, Applicant also states that service management tools "provide

the status of any of those services in the light of dependencies amongst them" (see *Specification* – Page 2, Lines 16-18). Thus, the status of a service is dependent upon the statuses of any underlying services on the network.

Conclusion

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Doug Hutton whose telephone number is 571-272-4137. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon, can be reached at (571) 272-4136. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

WDH
December 8, 2005

DOUG HUTTON
PATENT EXAMINER
TECH CENTER 2100